# BRITISH COLUMBIA MINISTRY OF FORESTS

# Tree Farm Licence

# TFL 41

**Held by West Fraser Mills Ltd.**

## Rationale for Allowable Annual Cut (AAC) Determination

effective January 1, 1994
until next determination within five years

**John Cuthbert**
**Chief Forester**
**August 23, 1994.**

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# Description of the TFL

Tree farm licence (TFL) 41, presently held by West Fraser Mills Limited, is situated in the Kalum Forest District, adjacent to the Kitimat area, on the B.C. coast, just north of the Mid-Coast timber supply area (TSA). TFL 41 includes a northern portion that is accessible from the communities of Terrace and Kitimat, and a southern portion that encompasses ocean waterways and the township of Kemano and is accessible only by air or water. In TFL 41, areas that are accessible by road are termed "onshore" and areas accessible only by water or air are termed "offshore." The entire southern portion is considered offshore, while the northern portion (north half) has both onshore and offshore components.

The total land base for TFL 41 is 1 019 740 hectares (ha), with a productive forest land base of 270 891 ha and a net operable land base of 64 619 ha (i.e. 24 percent of productive forest or 6.3 percent of total TFL area). At the present date the recently protected Kitlope valley has not yet been officially removed from the TFL, although it does not contribute to the allowable annual cut (AAC) for the TFL, nor did it contribute to the AAC in the previous determination associated with Management Plan No. 4.

The forest of TFL 41 lies within the Coastal Western Hemlock biogeoclimatic zone (in the wet submaritime and very wet submaritime subzones). The timber in the area is predominantly very old western hemlock/amabilis fir with some area in younger ages, and very little in intermediate ages. There is a high incidence of decay in the older wood, leading to a relatively low sawlog content. The volume of logs harvested annually from the TFL is processed locally by the Skeena Sawmill Division of West Fraser Mills Ltd., in Terrace and by North Coast Timber in Prince Rupert. The Skeena Sawmill Division produces dimension lumber, by-product chips, whole log chips, sawdust and hog fuel. All secondary products are used by the Kitimat Pulp Mill.

# Recent AAC history

On January 1, 1986, the Chief Forester determined an AAC for TFL 41 of 430 000 $m^3$. On January 1, 1990, to allow for harvesting under the Kemano-Kitimat transmission line, a further 70 000 m 3 were added, for a total of 500 000 $m^3$. This increased level of AAC continued for three years until January 1, 1993, when the AAC reverted to 430 000 $m^3$, at which level it has continued until the present determination. Until the present determination there has been no partitioning of the AAC for the TFL, and the harvest--except for the 70 000 $m^3$ that was harvested from the Kemano area (in the southern half)--has been based entirely on the north half land base.

# Land use issues

TFL 41 includes both the recently protected Kitlope valley and the Foch/Miskatla/Kitsaway Protected Areas Strategy (P.A.S.) study area. The Government of British Columbia announced the Kitlope valley as a permanently protected area on August 16, 1994. The licensee agreed to voluntarily relinquish its harvesting rights in the area, and the valley will be officially removed from the TFL at a later date. Being a protected area, the Kitlope river valley is assumed not to contribute to the harvestable land base for the purposes of this AAC determination. It should also be noted that the Kitlope valley did not contribute to the AAC in the previous determination associated with Management Plan No. 4. However, as a P.A.S. study area the Foch/Miskatla/Kitsaway does contribute to the AAC in this determination,

pending a land-use decision by Cabinet.

# AAC Determination

The AAC for TFL 41 will be 400 000 $m^3$: Of this, 180 000 $m^3$ will be partitioned to the onshore portion. This corresponds to the north half onshore referred to in the timber supply analysis, and is defined as supply blocks 1-4 and compartments 6, 25 and 26 of supply block 5. This definition is the same as in the Statement of Management Objectives, Options and Procedures (the SMOOP), with the addition of compartment 6. Compartment 6 of supply block 5 is clearly within the onshore as shown in the administrative features map of the resource folio for Management Plan 5. 220 000 $m^3$ will be partitioned to the remainder of the TFL.

The AAC is to remain in effect from January 1, 1994, until December 31, 1998, or until a new determination is made based upon the receipt of information required to correct deficiencies in the information available for this present determination.

The deficiencies were that the licensee's timber supply analysis did not adequately incorporate current integrated management principles, such as cut-block adjacency, protection of old growth, protection of streamside areas, and visual quality objectives. A 20-year plan that incorporates these factors must be provided according to the schedule set out in the August 23, 1994, letter from Chief Forester John Cuthbert to Skeena Sawmills, (copy attached).

A revised 20-year plan is required because the Kalum Forest District staff who reviewed the licensee's existing 20-year plan found that it did not demonstrate that the proposed cut could be maintained without compromising the May 1992 Regional Timber Harvesting Guidelines, to which the licensee committed as part of Management Plan No. 5. Based on the outcome of the 20-year plan, a new timber supply analysis may be required, and the AAC may be revised.

The AAC determined is lower than the figure of 450 000 $m^3$ proposed by the licensee, mainly because the Kitlope river valley does not to contribute to the harvesting land base as was assumed in the licensee's proposal which was made before official protection of the Kitlope.

# Information sources used

Information considered in determining the AAC for TFL 41 includes the following:

- TFL 41 Management Plan No. 5;
  Timber supply analyses dated March 15, 1993, and February 23, 1994, by the licensee;
  Review by the B.C. Forest Service of licensee's timber supply analysis, June 14, 1994;
  20-year plan for TFL 41;
  Letter of March 30, 1994, from Kalum Forest District Manager to the licensee rejecting the 20-year plan;
  Statement of Management Objectives, Options and Procedures (SMOOP) for TFL 41, dated June 1991.

# Rationale for decision

# Factors required to be considered

Section 7 of the *Forest Act* (revised 1992) requires the Chief Forester to consider various factors in determining AACs for TFLs. This section of the Act is appended as Appendix 1.

# Consideration of factors as required by Section 7

- Section 7 (3)
  In determining an allowable annual cut under this section the chief forester, despite anything to the contrary in an agreement listed in section 10, shall consider
  - (a) the rate of timber production that may be sustained on the area, taking into account
    - (i) the composition of the forest and its expected rate of growth on the area

## -- Growth and yield predictions

Although there remains some uncertainty regarding yield predictions, particularly for current standing volumes, the Forest Service's Inventory Branch and Research Branch approved the site index assignment methodology, waste and breakage factors and yield tables. I am satisfied that the timber growth rate projections used in the licensee's analysis constitute the best available information for use in determining allowable harvest levels for this area.

## -- Inventory information

The inventory of the TFL as a whole is dominated by old timber stands. This presents a problem of how to harvest this timber over time until second-growth stands are ready for harvest. However, in the north half onshore, a large proportion of the area is in young age classes (20 years or younger) reflecting the concentration of harvesting in this part of the TFL. This illustrates the current importance of distributing the harvest spatially throughout the TFL, which will be achieved through the partitioned AAC.

The latest timber inventory was completed during 1972-1976, and was updated for harvest depletion, wildfire, and reclassification of harvested areas to the end of 1990. The licensee is required to further update the inventory for Management Plan No. 6 with respect to a number of factors as set out in my letter of August 23, 1994 to the Licensee (copy attached). Acknowledging these shortcomings, and recognizing that the inventory will be updated, I am satisfied that the existing inventory provides the best information available at this time for use in determining harvest levels in TFL 41.

## -- Minimum harvest age

Minimum harvest age is the time it takes for stands to grow to a harvestable condition. Harvest ages in the licensee's analysis were set at the age of mean annual increment culmination, or slightly older. These ages fall within the following ranges: good site 60-80 yrs., medium site 80-90 yrs., poor site 100-120 yrs. I consider these ages to be a reasonable basis for use in this determination.

## -- Land base contributing to timber harvest

The method used to determine the land base contributing to the harvestable timber supply reflects standard analytical practice. Issues specific to integrated management, including environmentally sensitive areas are discussed under (v) below.

The contributing land base excludes areas operable only for non-conventional aerial or skyline yarding systems. The licensee has committed to an analysis of the feasibility of harvesting these areas. This analysis, as well as a review of demonstrated performance, will be used in assessing whether these lands should contribute to the harvestable land base for the next management plan, MP No. 6.

TFL 41 includes both the recently protected Kitlope valley and the Foch/Miskatla/Kitsaway Protected Areas Strategy (P.A.S.) study area. The Government of British Columbia announced the Kitlope valley as a permanently protected area on August 16, 1994. The licensee agreed to voluntarily relinquish its harvesting rights in the area, and the valley will be officially removed from the TFL at a later date. Being a protected area, the Kitlope river valley is assumed not to contribute to the harvestable land base for the purposes of this AAC determination. It should also be noted that the Kitlope valley did not contribute to the AAC in the previous determination associated with Management Plan No. 4. However, as a P.A.S. study area the Foch/Miskatla/Kitsaway does contribute to the AAC in this determination, pending a land-use decision by Cabinet.

- (ii) the expected time that it will take the forest to become re-established on the area following denudation;

**-- Regeneration delay**

All naturally regenerated stands in TFL 41 have a regeneration delay of six years. Areas regenerated by planting have regeneration delays based on site class: poor site - 6 years; medium site - 4 years; and good site - 2 years. These figures were used in the licensee's timber supply analysis, and I am satisfied that they are appropriate for use in determining the AAC on this area. Ministry staff believe the delay may be three years on good sites instead of two, but this would have negligible effect on timber volumes available for harvest.

**-- Not satisfactorily re-stocked (NSR) areas**

There were 3 827 hectares of current, and 243 hectares of backlog NSR on the TFL at the time of this analysis. The existing current NSR will be restocked according to the regeneration delay, and the licensee's timber supply analysis shows that the small amount of backlog will be eliminated within 10 years. As a condition to approving Management Plan No 5, I have requested in my letter of August 23, 1994, the submission of a plan to eliminate the backlog NSR. In approving this plan, the Kalum District may require restocking of the backlog in the next five years, but this will not significantly affect timber supply, due to the small area involved and short time difference relative to the timber supply analysis. I am satisfied that the restocking objectives will be met and that these assumptions are therefore appropriate.

- (iii) silvicultural treatments to be applied to the area;

The licensee's proposed silvicultural treatments on TFL 41 meet basic silvicultural requirements. The analysis did not consider incremental silviculture. Some juvenile spacing is proposed in the management plan, but this will not significantly affect harvestable timber volumes.

- iv) the standard of timber utilization and the allowance for decay, waste and breakage expected to be applied with respect to timber harvesting on the area;

Current and proposed timber utilization on TFL 41 is consistent with Kalum Forest District standards. The standards permit optional use of logs to 10 cm top diameter. The volume differential between the 10

cm optional and 15 cm mandatory top diameters will be recorded for cut control purposes. This is consistent with the timber supply analysis, which assumed utilization to a 10 cm top diameter. The decay, waste and breakage factors used in the licensee's analysis were approved by the B.C. Forest Service. I am satisfied that these factors are appropriate for use in determining this AAC.

- (v) the constraints on the amount of timber produced from the area that reasonably can be expected by use of the area for purposes other than timber production;

**– Integrated resource management (IRM) constraints**

The licensee's analysis did not make specific allowances for integrated management objectives for cut-block adjacency, old-growth retention, protection of streams and streamside areas, or for visual quality or recreation. It did include substantial reductions from the harvestable land base for environmentally sensitive areas (ESAs), and the licensee contended that in total, these areas would be large enough to satisfy requirements for old-growth to meet biodiversity objectives and to protect stream ecosystems. However, it is very unlikely that the spatial distribution of the ESAs would coincide with requirements for biodiversity and streamside area protection included in the harvesting guidelines for the Prince Rupert Forest Region and the British Columbia Coastal Fisheries/Forestry Guidelines. The licensee committed to comply with both of these guidelines in Management Plan No. 5. In addition the Kalum Forest District Manager, in a letter dated March 30, 1994, rejected the 20-year plan submitted by the licensee primarily because it does not meet integrated management objectives, including those for biodiversity, cut-block size and adjacency, and age and species distribution.

Because the analysis and the existing 20-year plan do not demonstrate that integrated management objectives can be met, including those for recreation and visual landscape, I am requesting a revised 20-year plan, to be submitted in accordance with the schedule set out in my letter of August 23, 1994 to the licensee.

Because of the uncertainty due to the lack of adequate consideration of integrated management factors in the licensee's analysis, the AAC I have determined may be revised after review of the required information. In my judgement, the AAC I have determined will minimize short-term social dislocation during this period.

Aboriginal issues: A study of traditional use may occur on the TFL during the term of the management plan. This will assist in the identification of aboriginal traditional activities and may require an amendment to the management plan, which could necessitate revisiting the AAC.

- (vi) any other information that, in his opinion, relates to the capability of the area to produce timber;

I am not aware of any such information at this time.

- (b) the short and long term implications to the Province of alternative rates of timber harvesting from the area;

The timber supply analyses for TFL 41 indicated that for a land base not including the Kitlope river valley, the harvest level must decline over the next 20 years from 400 000 $m^3$/yr. to 350 000 $m^3$/yr. If this gradual decline does not occur, there will be severe timber supply shortages further in the future.

The analysis shows that the harvest level can be maintained above the long term level in the short term;

however, I will reassess this capability upon receipt of the new information to be submitted by the licensee.

- (c) the nature, production capabilities and timber requirements of established and proposed timber processing facilities;

The AAC determination has included those types of timber which are capable of being manufactured in regional processing facilities.

- (d) the economic and social objectives of the Crown, as expressed by the minister, for the area, for the general region and for the Province; and

While the Minister has not expressed any specific social or economic objectives of the Crown for TFL 41, he has expressed the social and economic objectives of the Crown for the province (letter attached as appendix) and I understand them to apply to TFL 41 as well. They are consistent with the objectives stated in the Forest Renewal Plan and include good forest stewardship, a stable timber supply, and allowance of time for communities to adjust to harvest level changes in a managed transition from old growth to second-growth forests, so as to provide for continuity of employment. The Minister advised that any decreases in allowable cut at this time should be no larger than are necessary to avoid compromising long-run sustainability. He placed particular emphasis on the importance of long-term community stability and the continued availability of forest jobs. To this end he asked that I consider the potential impacts on timber supply of commercial thinning and harvesting in previously uneconomical areas.

Commercial thinning was not proposed by the licensee. To encourage harvesting in the previously underutilized southern half and to maintain harvest levels I have instituted a partitioned cut that will require more activity in the southern half. The analysis did not indicate any opportunities for harvesting in areas historically considered to be physically inoperable.

- (e) abnormal infestations in and devastations of, and major salvage programs planned for, timber on the area.

Factors used in the analysis to account for non-recoverable losses such as those due to fire, windthrow and insects, were comparable to those used in the timber supply analyses for the adjacent Kalum TSA, and constitute the best available information for use in this area.

# Technical limitations of the information used

In making this AAC determination I am aware of the technical limitations of the information provided, and have taken these limitations into account.

The *Forest Act* instructs me to consider biophysical as well as social and economic information in AAC determinations. A timber supply analysis and the inventory and growth and yield data used as inputs to the analysis formed the major body of technical information used in my AAC determination for TFL 41. The timber supply analysis and associated inventory are concerned primarily with biophysical factors such as rate of timber growth, and definition of the land base considered available for timber harvesting. They also indirectly incorporate some economic information such as an operability classification that defines the types of terrain and timber that can be physically and economically accessed given current technology and markets.

However, the analytical techniques used to assess timber supply are simplifications of the real world. There is uncertainty about many of the factors used as inputs to timber supply analysis due to both random variation and limited understanding of ecological dynamics.

Furthermore, technical analytical methods such as computer models cannot incorporate all of the social, cultural, and economic factors that are relevant when making forest management decisions. Therefore, technical information and analysis do not necessarily provide the correct answer or solution to forest management problems such as AAC determination. The information does, however, provide valuable insight into potential impacts of different resource-use assumptions and actions, and thus forms an important component of the information I must consider in AAC determinations.

In making the AAC determination for TFL 41, I have considered the limitations of the technical information provided. I am satisfied that this information provides a sound basis for my determination.

# Implementation of Decision

Changes in forest management since the last timber supply analysis for TFL 41 have affected timber supply. Given the deficiencies in information, the licensee's analysis reflects these effects only in part. Consequently I have requested the information necessary to determine an AAC that more completely reflects current management objectives for all forest values. In the interim, there is a need to determine a harvest level despite the uncertainties in information. I have therefore determined an AAC of 400 000 $m^3$ which will reflect current management objectives to some extent while minimizing short-term social dislocation.

The AAC will be partitioned in the following manner:

- 1. - 180 000 $m^3$ will be partitioned to the onshore portion of the TFL. The onshore portion is defined as supply blocks 1-4 and compartments 6, 25 and 26 of supply block 5. This is as defined in the Statement of Management Objectives, Options and Procedures (the SMOOP), with the addition of compartment 6. Compartment 6 of supply block 5 is clearly within the onshore as shown in the administrative features map of the resource folio for Management Plan 5.
  2. - 220 000 $m^3$ will be partitioned to the remainder of the TFL.

John Cuthbert, RPF
Chief Forester
August 23, 1994

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# Appendix 1: Section 7 of the B. C. *Forest Act*

**The B.C. *Forest Act* Section 7 (revised 1992) reads as follows:**

### Allowable annual cut

- 7. (1) The chief forester must determine an allowable annual cut before December 31, 1995, and after that determination at least once every 5 years after the date of the last determination, for
  - (a) the Crown land in each timber supply area, excluding tree farm licence areas and woodlot licence areas, and

(b) each tree farm licence area.

- (1.1) If, after the coming into force of this subsection, the minister

- (a) makes an order under section 6 (b) respecting a timber supply area, or
  (b) amends or enters into a tree farm licence to accomplish the result set out under section 33.1 (1) (a) to (d),

then, with respect to that timber supply area or tree farm licence area, as the case may be, the chief forester is not required to make the determination under subsection (1) of this section before December 31, 1995, or within 5 years after the last determination, but is required to make the determination

- (c) within 5 years after the order under paragraph (a) or the amendment or entering into under paragraph (b), and
  (d) after the determination under paragraph (c), at least once every 5 years after the date of the last determination.

- (1.2) When the chief forester determines an allowable annual cut for a tree farm licence area, any management plan that specifies an allowable annual cut for that area is conclusively deemed to be amended so that the allowable annual cut specified in the management plan is the same as the most recent one determined by the chief forester.
- (1.3) In determining an allowable annual cut under this section the chief forester may specify portions of the allowable annual cut attributable to

- (a) different types of timber and terrain in different parts of Crown land within a timber supply area or tree farm licence area,
- (b) different types of timber and terrain in different parts of private land within a tree farm licence area, and
- (c) gains in timber production on Crown land that are attributable to silviculture treatments funded by the Province, the federal government, or both.

- (2) The regional manager or district manager shall determine a volume of timber to be harvested under a woodlot licence during each year or other period of its term, according to the licence.
- (3) In determining an allowable annual cut under this section the chief forester, despite anything to the contrary in an agreement listed in section 10, shall consider
  - (a) the rate of timber production that may be sustained on the area, taking into account
    - (i) the composition of the forest and its expected rate of growth on the area;
    - (ii) the expected time that it will take the forest to become re-established on the area following denudation;
    - (iii) silvicultural treatments to be applied to the area;
    - (iv) the standard of timber utilization and the allowance for decay, waste and breakage expected to be applied with respect to timber harvesting on the area;
    - (v) the constraints on the amount of timber produced from the area that reasonably can be expected by use of the area for purposes other than timber production; and
    - (vi) any other information that, in his opinion, relates to the capability of the area to produce timber;
  - (b) the short and long term implications to the Province of alternative rates of timber harvesting from the area;
  - (c) the nature, production capabilities and timber requirements of established and proposed timber processing facilities;
  - (d) the economic and social objectives of the Crown, as expressed by the minister, for the area, for the general region and for the Province; and
  - (e) abnormal infestations in and devastations of, and major salvage programs planned for, timber on the area.

# Appendix 2: Section 4 of the Ministry of Forests Act

- Section 4 of the *Ministry of Forests Act* (1978) reads as follows:
  Purposes and functions of ministry
  - 4. The purposes and functions of the ministry are, under the direction of the minister, to
    - (a) encourage maximum productivity of the forest and range resources in the Province;
      (b) manage, protect and conserve the forest and range resources of the Crown, having regard to the immediate and long term economic and social benefits they may confer on the Province;
      (c) plan the use of the forest and range resources of the Crown, so that the production of timber and forage, the harvesting of timber, the grazing of livestock and the realization of fisheries, wildlife, water, outdoor recreation and other natural resource values are coordinated and integrated, in consultation and cooperation with other ministries and agencies of the Crown and with the private sector;
      (d) encourage a vigorous, efficient and world competitive timber processing industry in the Province; and
      (e) assert the financial interest of the Crown in its forest and range resources in a systematic and equitable manner.

# Appendix 3: Minister's July 28, 1994 Letter to the Chief Forester.

File: 10100-01

*Jul 28 1994*

John Cuthbert
Chief Forester
Ministry of Forests
595 Pandora Avenue
Victoria, British Columbia
V8W 3E7

Dear John Cuthbert:

Re: Economic and Social Objectives of the Crown

The *Forest Act* gives you the clear responsibility for determining Allowable Annual Cuts, decisions with far-reaching implications for the province's economy. The *Forest Act* provides that you consider the social and economic objectives of the Crown, as expressed by me, in making these determinations. The purpose of this letter is to provide this information to you.

The social and economic objectives expressed below should be considered in conjunction with environmental considerations as reflected in the Forest Practices Code, which requires recognition and better protection of non-timber values such as biodiversity, wildlife and water quality.

The government's general social and economic objectives for the forest sector are made clear in the goals of the Forest Renewal Program. In relation to the Allowable Annual Cut determinations you must make, I would emphasize the particular importance the government attaches to the continued availability of good forest jobs and to the long-term stability of communities that rely on forests.

Through the Forest Renewal Plan, the government is taking the steps necessary to facilitate the transition to more value-based management in the forest and the forest sector. We feel that adjustment costs should be minimized wherever possible, and to this end, any decreases in allowable cut at this time should be no larger than necessary to avoid compromising long-run sustainability.
In addition to the provincial perspective, you should also consider important local social and economic objectives that may be derived from the public input on the Timber Supply Review discussion papers where these are consistent with the government's broader objectives.

Finally, I would note that improving economic conditions may make it possible to harvest timber which has typically not been used in the past. For example, use of wood from commercial thinnings and previously uneconomic areas may assist in maintaining harvests without violating forest practices constraints. I urge you to consider all available vehicles, such as partitioned cuts, which could provide the forest industry with the opportunity and incentive to demonstrate their ability to utilize such timber resources.

Yours truly,

Signed by
Andrew Petter
Minister

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